PONY

سلسلة كتب الأستاذ

Programming and Artificial Intelligence

November Revision

By

Eng. Osama Youssef

1st Secondary

First Term

Scan Me

Scan for Revision Video

November Revision

Questions

1 Choose the correct answer:

1. Complements are used to represent ..... in computers.
   a. positive numbers b. negative numbers
   c. decimal numbers d. all of them
2. The connection standard that transmits audio and video over a single cable is the ..... .
   a. USB b. HDMI c. Ethernet d. VGA
3. To calculate the 9's Complement of a decimal number, you subtract each digit from ..... .
   a. 10 b. 9 c. 5 d. 1
4. What is the 9's Complement of the number 635?
   a. 635 b. 365 c. 463 d. 364
5. ..... is the term that refers to visually representing data to make it more understandable.
   a. Abstraction b. Pictogram c. Structuring d. Visualization
6. The smallest unit that defines the shape of a digital image is the ..... .
   a. resolution unit (dpi) b. pixel
   c. sampling d. encoding
7. What is the function of the operating system?
   a. It increases the Internet speed.
   b. It controls the hardware functions and runs programs.
   c. It only saves files.
   d. It temporarily shuts down the computer.
8. What is the Two's Complement of the binary number $0101_{(2)}$?
   a. $1010_{(2)}$ b. $1011_{(2)}$ c. $0101_{(2)}$ d. $0001_{(2)}$
9. Programs and data are stored temporarily in the ..... .
   a. main memory b. secondary memory
   c. arithmetic unit d. input unit

10 What is the relationship between the 9's Complement and the 10's Complement?

a. The 10's Complement is the 9's Complement minus 1.
b. The 10's Complement is the 9's Complement plus 1.
c. The 10's Complement is the 9's Complement multiplied by 10.
d. The 10's Complement is the 9's Complement divided by 10.

11 What is the One's Complement of the binary number 0101?

a. $0101_{(2)}$ b. $1011_{(2)}$ c. $1010_{(2)}$ d. $0110_{(2)}$

12 If an image has a resolution of X pixels (vertical) × Y pixels (horizontal), and each pixel is represented by Z bits, the correct equation for calculating the data size (in bits) is ..... .

a. X x Y
b. X x Y x Z
c. Z + (X x Y)
d. X x Y x {Number of primary colors}

13 In the method of subtraction using complements, which operation does a computer use instead of subtraction?

a. Multiplication b. Division
c. Addition d. Subtraction itself

14 To calculate the 10's complement of the number 29, you first find its 9's complement, which is 70. What is the 10's Complement?

a. 70 b. 71 c. 69 d. 80

15 Which of the following is considered system software?

a. Operating System b. Excel program
c. PowerPoint program d. Browser application

16 How do you get the Two's Complement from the One's Complement?

a. By flipping the bits again.
b. By subtracting 1 (base 2) from the one's complement.
c. By adding 1 (base 2) to the one's complement.
d. By ignoring the leading digit.

17 When subtracting using complements, what should you do with the final carry digit?

a. Add it to the next digit.
b. Multiply it by two.
c. Leave it as it is.
d. Ignore it.

18 In the binary system, what do you do to each bit to find the One's Complement?

a. Multiply it by 2.
b. Subtract it from 10.
c. Invert it (flip it) from 0 to 1 and from 1 to 0.
d. Add 1 to it.

19 In subtraction using complements, you must first find the complement of the ..... .

a. subtracted from
b. subtrahend
c. final result
d. leading digit

20 Which of the following is considered a hardware component?

a. Operating System
b. Internet Browser
c. Excel Application
d. Central Processing Unit (CPU)

21 In the decimal subtraction 8 - 6 using complements, you add 8 to the 10's complement of 6, which is 4. What is the result of this addition before you ignore the carry digit?

a. 2 b. 4 c.12 d.8

22 Secondary memory is used for ..... .

a. storing data temporarily
b. executing instructions quickly
c. long-term storage of data and programs
d. controlling data flow

23 What is the experience or emotional effect users get from interacting with a product or service?

a. User Interface (UI)
b. Graphical User Interface (GUI)
c. User Experience (UX)
d. Affordance

24 What is the main disadvantage of the Bitmap format compared to the Vector format?

a. It reduces the number of pixels in the image.
b. It only allows for representing text and shapes.
c. It causes symbols to appear unreadable when printed.
d. Jaggies appear when the image is enlarged.

25 According to the LATCH principle, which type of classification is based on the sequence of events over time?

a. Location b. Alphabet c. Time d. Category

26 In the 24-bit full color system, what is the number of color levels that can be represented for a single primary color (like Red)?

a. 8 levels b. 24 levels c. 256 levels d. 224 levels

27 What is meant by software?

a. It includes the hardware devices of the computer.
b. It includes the programs and data that run on the hardware.
c. It includes the computer's memory only.
d. It includes the network components.

28 What is the concept that refers to how easily data and services can be accessed by a wide range of people, including those with special needs?

a. Affordance b. Usability
c. Accessibility d. Universal design

29 What are the three primary colors of light which, when mixed, increase in brightness and approach white?

a. Cyan, Magenta, and Yellow b. Red, Green, and Blue
c. Violet, Yellow, and Black d. White, Gray, and Black

30 What is the interface where icons and buttons are used in an easy-to-understand way to exchange information between humans and devices?

a. Command Line Interface (CUI) b. User Interface (UI)
c. Graphical User Interface (GUI) d. User Experience (UX)

31 According to the LATCH principle, which type of classification is based on the differences between things and is used as an axis to distinguish domains?

a. Location b. Alphabet c. Time d. Category

32 A computer consists of five main components, which are: ..... .

a. Control Unit, Arithmetic Unit, Memory Unit, Input Unit, Output Unit
b. Screen, Mouse, Printer, Keyboard, Storage Unit
c. Processor, Motherboard, Battery, Hard Drive, Screen
d. Input Unit, Output Unit, Network Unit, Cooling Unit, Arithmetic Unit

33 Examples of input units include the ..... .

a. screen and printer b. keyboard and scanner
c. hard drive and SSD d. speakers and wireless mouse

34 The relationship between the five computer components depends on ..... .

a. the data flow and control flow between the units
b. only the speed of the hard drive
c. the screen size and display resolution
d. the type of operating system used

35 The Control Unit and the Arithmetic Unit are known together as ..... .

a. Input Unit b. Memory Unit
c. Central Processing Unit (CPU) d. Storage Unit

36 The standard used to connect computers within Local Area Networks (LAN) is the ..... .

a. HDMI b. Bluetooth c. Ethernet d. USB

37 The USB is typically used to connect ..... .

a. network devices only
b. peripheral devices such as printers
c. internal storage units
d. audio systems only

38 The function of the Control Unit is ..... .

a. executing instructions and issuing commands to the other units
b. storing data temporarily
c. processing data only
d. outputting the final information

39 What is meant by an "Interface"?

a. It is a program that manages the hardware.

b. It is a component that mediates information exchange between the computer and peripheral devices.

c. It is an internal storage unit.

d. It is the operating system for peripheral devices.

40 The ..... is the most widely used interface for peripheral devices.

a. HDMI b. Ethernet c. USB d. CPU

2 Put (✓) or (✗):

1 The final step in subtraction is to ignore the leading digit. ( )

2 Pictograms use words to express information. ( )

3 A digital image is made up of small units called pixels. ( )

4 Word processing software is a type of system software. ( )

5 Secondary memory is used for temporary storage. ( )

6 Complements are used to represent positive numbers. ( )

7 Quantization of an image assigns numbers to brightness. ( )

8 GUI uses icons and buttons for easy interaction. ( )

9 The control unit and arithmetic unit together form the CPU. ( )

10 Subtraction in computers is done using addition with complements. ( )

11 In sampling, the image is divided into pixels. ( )

12 Input devices like the keyboard and mouse output information. ( )

13 A driver is a type of hardware. ( )

14 The unit of resolution is dpi. ( )

15 LATCH method makes information harder to understand. ( )

16 The main memory manages the flow of control. ( )

17 24-bit full color uses 8 bits for each primary color. ( )

18 Icons represent a program's content visually. ( )

19 An interface mediates data exchange between the computer and peripherals. ( )

20 Subtractive color mixing is used to represent colors in computer screens. ( )

21 Android OS is an example of application software. ( )

22 The control unit performs calculations in the computer. ( )

23 Higher resolution images have fewer pixels than lower resolution images. ( )

24 The 2's Complement of $0111_{(2)}$ is $1001_{(2)}$. ( )

25 Visualization makes data harder to understand. ( )

26 File management is a function of the operating system. ( )

27 $1000_{(2)} - 0111_{(2)}$ equals $10001_{(2)}$. ( )

28 Usability is unrelated to information design. ( )

29 HDMI connects peripherals like printers and scanners. ( )

30 File management is a function of the operating system. ( )

Answers

1

1 b	2 b	3 b	4 d
5 d	6 b	7 b	8 b
9 a	10 b	11 c	12 b
13 c	14 b	15 a	16 c
17 d	18 c	19 b	20 d
21 c	22 c	23 c	24 d
25 c	26 c	27 b	28 c
29 b	30 c	31 d	32 a
33 b	34 a	35 c	36 c
37 b	38 a	39 b	40 c

2

1 ✓	2 ✗	3 ✓	4 ✗
5 ✗	6 ✗	7 ✓	8 ✓
9 ✓	10 ✓	11 ✓	12 ✗
13 ✗	14 ✓	15 ✗	16 ✗
17 ✓	18 ✓	19 ✓	20 ✗
21 ✗	22 ✗	23 ✗	24 ✓
25 ✗	26 ✓	27 ✗	28 ✗
29 ✗	30 ✓		